

Amendments to the Claims

1. (Currently Amended) A method of increasing cytosolic Ca^{2+} levels in an airway epithelial cell comprising contacting P2X receptors on the cell with an effective amount of Zn^{2+} one or more of the following molecules: Zn^{2+} ; ATP; ivermectin; α, β -methylene-ATP; benzoyl-benzoyl-ATP; $\text{ATP}\gamma\text{S}$; or AMPPNP.
2. (Original) The method of claim 1, wherein the P2X receptors are not contacted with zincum gluconium.
3. (Original) The method of claim 1, wherein the Zn^{2+} is in the form of zinc chloride.
- 4-11. (Canceled).
12. (Currently Amended) The method of claim 1, further comprising
 - a. contacting the cell with an effective amount of ATP, or
 - b. reducing the cell's extracellular Na^+ or contacting the cell with a Zn^{2+} containing solution with low Na^+ , or
 - c. alkalinizing the cell's extracellular fluid or contacting the cell with an alkaline solution containing Zn^+ Zn^{2+} , or
 - d. reducing the cell's extracellular Mg^{2+} or contacting the cell with a Zn^{2+} containing solution with low Mg^{2+} , or
 - e. increasing the cell's extracellular Ca^{2+} or contacting the cell with a Zn^{2+} containing solution with high Ca^{2+} , or
 - f. any combination of steps a-e.
13. (Currently Amended) A method of treating an airway disease in a subject, comprising contacting epithelial cells in the trachea, bronchi, bronchioles, or alveoli of a subject with

an effective amount of Zn^{2+} one or more of the following molecules: Zn^{2+} ; ATP; ivermectin; α, β -methylene-ATP; benzoyl-benzoyl-ATP; ATP γ S; or AMPPNP.

14-20. (Canceled).

21. (Currently Amended) The method of claim 13, further comprising
 - (a) contacting the cell with an effective amount of ATP, or
 - (b) reducing the cell's extracellular Na^+ or contacting the cell with a Zn^{2+} containing solution with low Na^+ , or
 - (c) alkalinizing the cell's extracellular fluid or contacting the cell with an alkaline solution containing Zn^+ Zn^{2+} , or
 - (d) reducing the cell's extracellular Mg^{2+} or contacting the cell with a Zn^{2+} containing solution with low Mg^{2+} , or
 - (e) increasing the cell's extracellular Ca^{2+} or contacting the cell with a Zn^{2+} containing solution with high Ca^{2+} , or
 - (f) any combination of steps a-e.
22. (Currently Amended) The method of claim 13, wherein the contacting step is performed with an Zn^{2+} -containing a Zn^{2+} ; ATP; ivermectin; α, β -methylene-ATP; benzoyl-benzoyl-ATP; ATP γ S; or AMPPNP-containing inhalant, nebulization, aerosol, or instillant.
23. (Original) The method of claim 13, wherein the zinc is in the form of zinc chloride ($ZnCl_2$).

24-36. (Canceled).

37. (Withdrawn) A composition comprising zinc and a saline solution, wherein the saline solution has low Na^+ , is enriched with Ca^{2+} , and is modified to an alkaline pH.

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38. (Withdrawn) A nasal spray, nebulizer, or aerosol inhaler comprising the composition of claim 37.

39-40. (Canceled).

41. (Withdrawn) The composition of claim 37, wherein the zinc is not in the form of zincum gluconium.

42. (Withdrawn) A method of treating a bacterial infection in a subject, comprising administering to the subject the composition of claim 37.

43. (Withdrawn) A method of reducing inflammation in a subject, comprising administering to the subject the composition of claim 37.

44. (Withdrawn) A method of treating polycystic kidney disease in a subject, comprising administering to the subject the composition of claim 37.

45. (Withdrawn) A method of treating a subject with an endocrine disorder, comprising administering to the subject the composition of claim 37.

46-47. (Canceled).

48. (Withdrawn) A method of screening for an airway epithelial Ca^{2+} entry channel agonist, comprising

- (a) contacting an airway epithelial cell with a test compound;
- (b) detecting calcium levels in the airway epithelial cell; and
- (c) screening for a sustained elevation in calcium as compared to a control level, indicating an airway epithelial Ca^{2+} entry channel agonist.

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49. (Withdrawn) The method of claim 48, wherein the Ca^{2+} entry channel is selected from the group consisting of a P2X purinergic receptor Ca^{2+} entry channel, a transient receptor potential (TRP) Ca^{2+} entry channel, a store-operated Ca^{2+} (SOC) entry channel, a calcium release activated channel (ICRAC), and a CAT-1 Ca^{2+} entry channel.

50. (Withdrawn) The method of claim 48 further comprising the step of:

(d) screening for reversibility of response by removing the agonist during the assay.

51. (Withdrawn) The method of claim 50, further comprising the step of:

(e) screening for dependence upon extracellular Ca^{2+} by repeating the assay in a solution devoid of extracellular Ca^{2+} .

52. (Withdrawn) The method of claim 48, wherein the airway epithelial cell is a cystic fibrosis airway epithelial cell.

53-57. (Canceled).

58. (Withdrawn) The method of claim 48, wherein the airway epithelial cell is in a solution containing an effective amount of ATP.

59-60. (Canceled).

61. (Withdrawn) The method of claim 48, wherein the airway epithelial cell is in a solution containing an effective amount of zinc.

62-63. (Canceled).